PUBLIC SCHOOLS OF NORTH CAROLINA
DEPARTMENT OF PUBLIC INSTRUCTION | June St. Clair Atkinson, Ed.D., *State Superintendent*

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Federal Communications Commission
445 12th Street SW
Washington, DC 20554

November 1, 2013

In the Matter of   )
Modernizing the E-rate   )   WC Docket No. 13-184
Program for Schools and Libraries   )

REPLY COMMENTS TO E-RATE 2.0 NOTICE OF PROPOSED RULE MAKING
June St. Clair Atkinson, Ed.D., State Superintendent
North Carolina Department of Public Instruction

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I. Background

The North Carolina Department of Public Instruction (NCDPI) commends the Commission on its commitment to positive E-rate reform. It is imperative that we come together NOW to improve teaching and learning. E-rate is one program that has moved the needle and is poised to play a significant role in positioning U.S. students as global learners and future leaders.

NCDPI offers instructional, financial, technological, and personnel support to more than 2,500 public schools, over one hundred charter schools, three residential schools for deaf and blind children, regional STEM schools, and the NC Virtual Public School – the second largest virtual public school in the nation. Our 1.5 million students have benefited tremendously through the federal E-rate program as our unique Per-Student Utilization Map highlights: https://www.mcnc.org/ncren/portal/reporting/ncren_utilization_map.

NCDPI and the NC State Board of Education encourage the use of broadband in the classroom in a variety of ways including the most comprehensive student information and instructional improvement system (Home Base) in the nation. Our School Connectivity Initiative, a public/private partnership implemented by many forward thinking individuals to whom we are exceedingly grateful, has fostered limitless possibilities for both teachers and students by providing scalable bandwidth at no cost to public schools since 2008-09. In order to ensure sufficient headroom, bandwidth is increased when utilization reaches 60% of available capacity. Bandwidth utilization has doubled year-over-year since 2010 and we expect this trend to continue indefinitely. Here is a small sample of the growth that we have experienced:

Avery County Schools — Average Annual Growth: 108%

Cumberland County Schools — Average Annual Growth: 145%

Halifax County Schools — Average Annual Growth: 40%

Mooresville Graded — Average Annual Growth: 56%
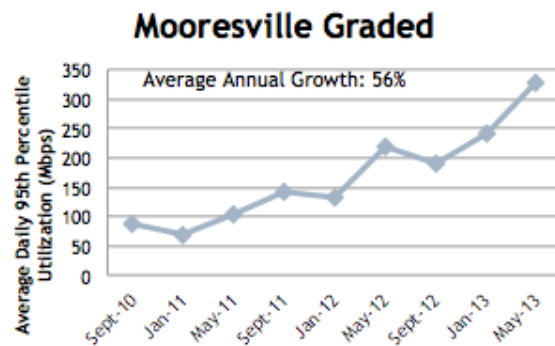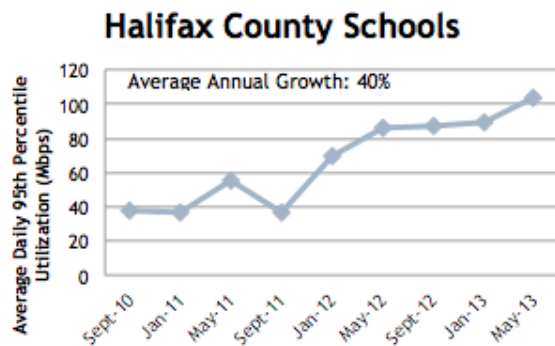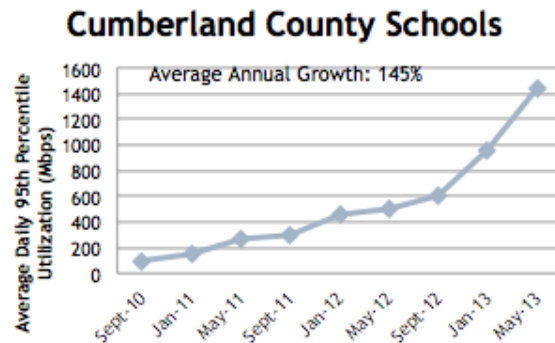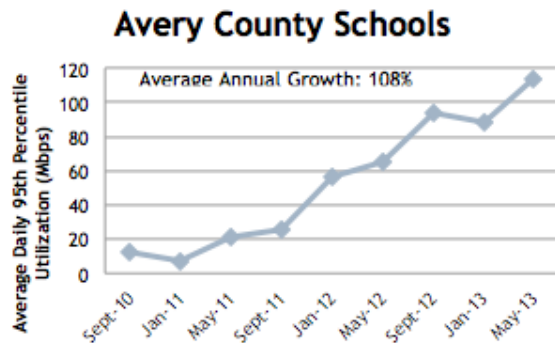
While we are proud of these wonderful accomplishments and appreciative of the vital E-rate discounts that have made it possible, there is still much to be accomplished, especially in providing high-density wireless inside the buildings and classrooms. Race to the Top provided about $50M to jump start ubiquitous high-density wireless in North Carolina public schools. However, based on a March 2013 Wireless survey of 114/115 districts, an additional $80M in short-term and $25M in recurring investment is needed to ensure modern high-density wireless coverage in all North Carolina classrooms. We encourage the FCC to make funding available in a fair and equitable way to support and maintain high-density wireless, as well as increased bandwidth. As Mooresville Graded School District's success has shown us, a visionary district with visionary leaders and partners can use scalable high-speed Internet access and reliable high-density wireless coverage to help students reach their full potential. In the spirit of collaboration we have shared the raw data from this survey with the Commission via: http://cloud.fi.ncsu.edu/status/.

At the same time, NCDPI is also concerned that many of our students may not have adequate or affordable Internet access at home. Our collaborative Ready Anywhere! Initiative, which aims to encourage public/private partnerships to address the goal of 24/7 Internet access for all North Carolina public school students, regardless of their geographic location or economic status, is beginning to bring attention and partnerships to the table, but the enormity of the task is daunting. Anything that the FCC can do, via E-rate or other programs, to help facilitate more affordable high-speed wired and wireless connectivity to the home will positively impact the competitiveness of our students and nation. A two-page introduction to READY Anywhere! is available via: http://www.ncpublicschools.org/docs/connectivity/ready-intro.pdf.

II. Encouraging Consortia

We agree with the State Consortia Group (SCG) that state networks "provide efficiencies" that applicants simply cannot afford on their own.

North Carolina is one of the leading states in the nation when it comes to filing Internet Access as a consortium for our 115 school districts and 60 public charter school members. In 2007, nine years after the birth of E-rate, the North Carolina General Assembly voted to infuse seed money, and sustainable monies going forward, through the School Connectivity Initiative (SCI). Just under $20 million in state taxpayer dollars are used annually in leveraging E-rate discounts. Our schools receive Internet connectivity and scalable bandwidth at no cost to the end users because of taxpayer and legislative support, the consortium filing efforts of a small but dedicated staff at NCDPI, and our public and private partners.

North Carolina public schools have been able to move forward with digital teaching and learning without worrying about bandwidth thanks to the wise implementation of a consortium approach. Access to centralized high-level Client Network Engineering (CNE) has been equally as important as scalable bandwidth. We encourage the FCC to take steps to support more consortia, including state CNE services financially, so that more applicants have access to scalable bandwidth and services that make leveraging that bandwidth more feasible and affordable.

The current consortia application process, while certainly not impossible, could benefit greatly from simplification and we encourage the FCC to reduce the administrative burden on the consortia lead as well as the consortium members by eliminating unnecessary forms such as the Form 479, and to speed up the application review process by assigning a team of dedicated consortium reviewers. Specifically, speeding up the review process and funding consortia applications earlier than has been tradition may encourage more states to cooperatively purchase additional services, especially large-scale services requiring a significant float.

III: Funding Modifications

A one-time infusion of seed money could be seen as a bridge, but can we really afford to cut funding for Internet access and high-density wireless in three or four years? This effort is going to take a decade or more of sustained increased funding, including funding for high-density wireless refresh. It is certainly difficult to determine the exact level of recurring funding needed to achieve bandwidth and wireless

connectivity goals across the nation, but we believe it is possible, in cooperation with states, and fiscally important.

In North Carolina, we encourage the use of Internet resources in the classroom, providing additional bandwidth as a district or charter needs it.   While it would be simple for all schools to have the same amount of bandwidth or to allocate funding on a per-pupil basis, we have found that schools are not interchangeable when it comes to utilization or costs. As our data collection shows, it doesn't always matter how big or small or how urban or rural when it comes to cost. To be fiscally responsible, we have a consortia model that ensures that a school has enough bandwidth headroom for growth and upgrade bandwidth as necessary through the year. Thanks to E-rate and our partners such as NTIA, North Carolina Office of Information Technology Services, MCNC, AT&T, CenturyLink, Time Warner, and many others, as well as our consortium members, we have been able to scale bandwidth to the school buildings 10X while operating under the same recurring appropriation since 2008-09.

In terms of Wide Area Network (WAN) transport, the state receives approximately $30 million in E-rate discounts annually and spends approximately $10 million to allow local education agencies to scale their WAN speeds as needed to support their educational goals and objectives. Our experience has been that our costs for WAN have remained relatively fixed over the past five years as the cost per Mbps has dropped in proportion to the necessary increases in speeds. The average WAN circuit in North Carolina is about 950 Mbps today. Of the 115 districts, 111 have fiber WANs, while four have fixed wireless WANs. We encourage the FCC to collect the data needed to understand the needs and establish a baseline and determine the amount of funding required in connecting all children and educators to the Internet via

scalable bandwidth and high-density wireless in every classroom. Since we have endeavored to scale

bandwidth based on utilization for almost five years now, and to enhance the Commission's record, we have

provided the Commission with a detailed K-12 State Network data analysis including, among other things,

$/Mbps, Kbps/student, $/student for ISP and WAN, and the number of districts that have been upgraded one

or multiple times since 2008-09. The analysis is available to download in an interactive format via:

http://www.ncpublicschools.org/connectivity/links/whitepapers/.

Once the actual need is determined, annual E-rate funding should be increased to a level that matches the

need and sustains the effort over time. In the last twelve months alone, we have completed 57 bandwidth

upgrades due to increasing utilization. It would also, therefore, seem wise to put the goal of ubiquitous high-

density wireless ahead of arbitrary bandwidth capacity goals. At the same time, we know that the single

most critical long-term sustainability factor is price of eligible goods and services. We encourage the FCC

to do everything within its power to encourage competition and lower prices for schools and libraries.

Finally, we encourage the Commissioners to set aside financial support for states in assisting schools and

libraries trying to navigate the E-rate waters. State consortia applications, statewide training, school and

library application support, including school and student verification, documentation retention and audit

support, and CNE services are all part of the partnership with the Federal Communication Commission and

USAC in "getting applications out the door," while reducing the appeal burden on the back end of the

process. We all want to get it right the first time and supporting the states just makes good fiscal and policy

sense.

IV. Application Streamlining

A much more simplified approach to filing is required as part of the E-rate 2.0 process. We have heard discussion of the possibility of a portal where applicants may simply pull up "last year's data," make a few adjustments, and submit. While that is oversimplifying, the system needs an update using Web 2.0 tools. A "multi-year" Form 471 is also a great idea that would save applicants significant time. The complexity of E-rate is currently daunting to even the savviest technology leader. However, the complexity of applicants is also obvious and we do not believe a "one size fits all approach" is capable of accounting for geographic and other unique differences, nor do we believe it encourages consortia. We believe the detailed cost analysis we have published supports this position.

V. High-Density Wireless

We agree with many commenters including EducationSuperHighway that high-density wireless in the classroom is just as important as bandwidth to the building and that high-density wireless in every classroom should be prioritized equally with any established bandwidth targets.

High-density wireless connectivity is a huge undertaking, but it is one that must be accomplished. We have realized that the quickest way for a school to achieve the goal of a device in the hands of every student is to carefully embrace a hybrid District-Owned and Bring Your Own Device (BYOD) model. This requires a robust and secure wireless environment to be used effectively. Some schools are more prepared for this than

others. We need a fair and equitable methodology to support and maintain high-density wireless in every school.

E-rate has enabled us to provide scalable connectivity at no cost to many new charter schools opening since the cap was removed three years ago. This has allowed these charters to focus on infrastructure. Research Triangle High School for example, which opened as a 1:1 school, was upgraded at no cost to the charter school from 10 Mbps to 20 Mbps to 50 Mbps in the first sixty days of its existence. It continues to have one of the highest per-student utilization figures in the state.

Unfortunately, it is exceedingly difficult for most new charter schools to find the funding to pay for all of the internal infrastructure necessary to open prepared for digital teaching and learning. Support for high-density wireless should be available to a new school just as is telecommunications and Internet access support.

VI. Conclusion

We feel that a combination of funding increases, equal attention to both high-density wireless and bandwidth, offering a more simplified filing approach, encouraging consortia, and financial support to the states for E-rate and CNE activities, will accomplish much in terms of the goals of the E-rate 2.0 reform effort.

We appreciate the opportunity to submit reply comments in support of the Commission's efforts to modernize E-rate to help meet the current and future needs of our schools and libraries. Please feel free to call upon the following staff for further clarification or questions.

Barry Pace
State Education E-rate Specialist
NC Department of Public Instruction
828 460 1937
barry.pace@dpi.nc.gov

Jeannene Hurley
State Education E-rate Specialist
NC Department of Public Instruction
252 624 9878
jeannene.hurley@dpi.nc.gov

Respectfully submitted,

June St. Clair Atkinson, Ed.D.
State Superintendent
NC Department of Public Instruction

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